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e-brief

Time and Money: Tracking the Fiscal Impact of Demographic Change in Canada

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Putting something aside for old age is common sense. Individuals should save during their working years to provide for their children and their own retirement. Likewise, aging countries should anticipate how their future age structure will affect their public finances. What does demographic change imply for age-sensitive public programs in Canada, and how well do current patterns of spending prepare us for those changes?

This e-brief quantifies the impact of demographic change on major public programs in Canada. It compares the share of gross domestic product (GDP) that will be required to service our programs for health, education, the elderly and children in the future with the share required in the recent past. Discounted at 5 percent over 50 years, these programs create a net liability for governments of more than $810 billion. But there are winners and losers. Overall, Ottawa comes out ahead, with a small net asset: prospective declines in spending on children outweigh increases in its pension obligations. Provinces, however, face sizeable increases in healthcare spending only partially offset by falling education budgets, with the outlook generally worsening as one moves from west to east across the country.

Maintaining the current age distribution of public spending in these programs will require future taxpayers to pay more for their lifetime package of programs than did their predecessors. These calculations highlight the need for budget surpluses, for greater fiscal capacity at the provincial level, and for productivity growth to support Canada's social programs in the future.

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Estimating Demography's Impact on Public Programs

This assessment of the fiscal impact of demographic change is straightforward. It begins with population projections using a handful of assumptions:

- each province's total fertility rate remains at its 2005 level through the projection period;
- life expectancies at birth rise at rates akin to those in Statistics Canada's "medium" improvement;
- inter-provincial migration for each age/sex category falls to zero over 10 years; and
- net international migration for each province in each age/sex category continues at the 2000-2004 average through the projection period.

Each province's GDP is the product of its projected working-age population (18 to 64 years) times a productivity index of output per potential worker. Each province's index is projected to grow at the same rate as the equivalent national measure did from 1981 to 2005: 1.5 percent annually.

The next step is to take existing patterns of expenditure for four major categories of programs:

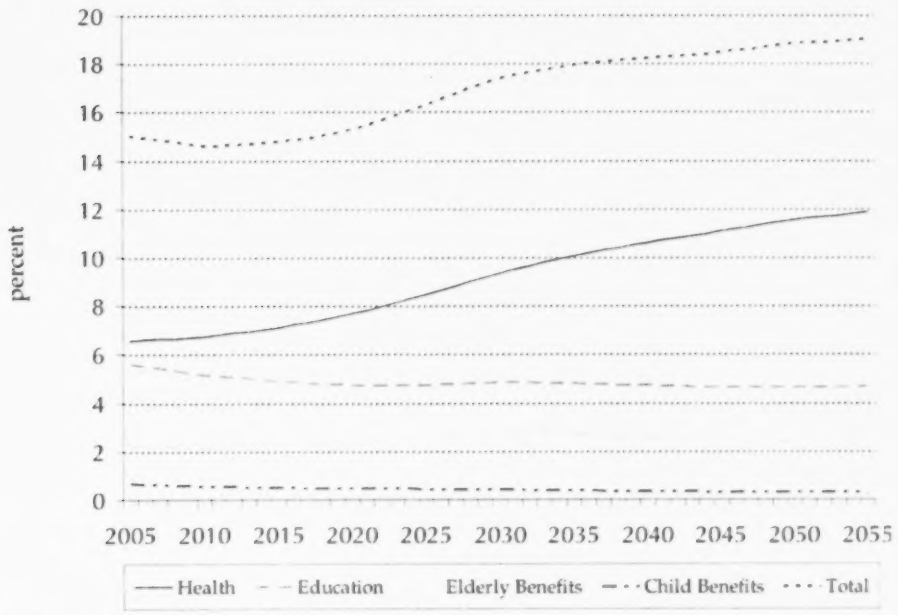
- *Healthcare*. Six age groups for each sex in each province[1] are projected on the assumptions that service intensity per person in each group rises at the same rate as the productivity index, and that health-sector inflation matches that in the broader economy;
- *Education*. Provincial spending[2] on elementary school students is projected from provincial populations aged 4 to 17 years and on postsecondary students from populations aged 18 to 24, assuming, as with health, that instruction expenses grow with productivity, and that inflation in education matches that of the broader economy. Federal grants to students grow with the population of 18-to-24-year-olds and the same index of service intensity, while the fixed-dollar Canada Education Saving Grant changes with the population of pre-university age: 0 to 17 years.
- *Elderly benefits*. The key data are inflation-adjusted benefits per person aged 65 and up for federal Old Age Security, Guaranteed Income Supplement and Allowances. Provincial projections assume the same time-path of service or transfer intensity for provincial as for federal programs.[3]
- *Child and family benefits*. Most spending is projected from the populations 0 to 17 years old, on the assumption that all relevant per-child amounts rise

1 Age/sex breakdowns from the Canadian Institute for Health Information are prorated to match aggregate national spending for 2005.

2 Statistics Canada's Financial Management System (2006, 27-28) shows both provincial and local spending on elementary and secondary education; since provinces now largely control these budgets, I show the total as provincial.

3 Calculated from projections by the Office of the Chief Actuary (OCA). Provincial spending in 2005 is from Statistics Canada's Social Policy Simulation Database and Model (SPSD/M), Release 14.1 (responsibility for use and interpretation rests with the author).

Figure 1: *Major Demographically Driven Programs as Share of GDP: National Total*



Source: Author's calculations from sources noted in text.

with inflation.[4] For a more complete picture, the new federal Universal Child Care Benefit is modeled as though it had existed in 2005.

The Results

Projected costs for each program type, expressed as shares of GDP, appear in Figure 1. Demographic change will raise their aggregate cost from some 15 percent of GDP in the next decade to 19 percent in 2055. Relative to today's economy, a 4 percentage-point increase represents a tax burden that is $54 billion — or $2,600 annually per working-age person — higher than what Canadians now pay for the same per-beneficiary program mix.

A complicating factor is the uneven incidence of this increased cost on different governments. Table 1 presents a summary measure: the implicit assets and liabilities these programs create. Discounting the change in a program's share of GDP over 50 years at a rate of 5 percent[5] yields figures that supplement other measures of government net worth. Implicit assets are like additional debt a government could carry and still meet other obligations with unchanged tax rates, while implicit liabilities are like income-earning funds a government would need to hold to meet other obligations at unchanged tax rates. They thus measure the

4 Provincial spending is from SPSD/M; federal spending on the Child Benefit is from the Public Accounts.

5 Robson (2003) discusses this approach, including choice of time horizon and discount rate.

Table 1: *Demographically Driven Implicit Assets and Liabilities ($billions except as noted)*

	Health	Education	Elderly Benefits	Child/Family Benefits	Total	Total as % of 2005 GDP
Canada	-1,223.6	389.6	-136.3	159.7	-810.6	-59.2
Newfoundland and Labrador	-30.4	6.0	-0.3	0.1	-24.6	-114.1
Prince Edward Island	-4.1	1.8	—	—	-2.3	-56.3
Nova Scotia	-36.9	9.8	—	0.1	-26.9	-85.5
New Brunswick	-30.5	7.0	0.0	0.1	-23.4	-98.5
Quebec	-286.8	60.8	—	—	-226.0	-82.2
Ontario	-460.3	174.4	—	2.0	-283.9	-52.8
Manitoba	-29.0	10.2	0.0	—	-18.8	-44.9
Saskatchewan	-17.4	13.7	0.0	0.1	-3.5	-8.3
Alberta	-149.2	42.1	-6.4	0.8	-112.8	-52.2
British Colombia	-167.7	49.9	—	1.0	-116.9	-69.5
Yukon	-3.5	0.5	—	—	-3.0	-194.5
North West Territories & Nunavut	-7.8	2.6	—	—	-5.3	-101.3
Federal	—	10.8	-129.6	155.5	36.7	2.7
Provincial/Territorial	-1,223.6	378.8	-6.7	4.2	-847.3	-61.9

Source: Author's calculations from sources noted in text.

gap between the benefits of public programs to recipients and their apparent cost to taxpayers — like the bonus that net assets and the wedge that net debt put between programs and taxes, or the unfunded liabilities in the Canada and Quebec Pension Plans (C/QPP) that will make future contributors pay more than the actuarial cost of their benefits.

Healthcare. The age/sex profile of spending interacts with demographic change to create dramatic increases in healthcare spending. Provinces where aging is more rapid, notably in the east, face powerful pressure. Countrywide, the projected increase in health budgets' share of GDP creates an aggregate liability of more than $1.2 trillion.

Education. In education, declining school- and postsecondary-age populations create a net asset, especially for provinces. The total national implicit asset related to education is about $390 billion.

Elderly benefits. Ottawa bears the brunt of elderly benefits: an implicit liability of almost $140 billion. Mitigating the burden is the anticipated near-term dip in the share of these programs in GDP, and the fact that productivity growth erodes the burden of price-indexed programs.

Child benefits. Child and family benefits also make the biggest difference to Ottawa: an implicit asset of almost $160 billion. Provinces with relatively large current spending will gain, in a fiscal sense, from children's shrinking share of population.

Summary and Implications

The key message is that implicit liabilities from healthcare are the biggest long-term challenge facing Canadian governments — an implicit liability of some $1.2 trillion, with the provinces bearing its brunt. Declines in the share of GDP devoted to education and child benefits provide partial offsets, but the total net demographically driven liability of more than $810 billion rivals the funded debt of all levels of government and the unfunded liabilities of the C/QPP. Notwithstanding a further implicit asset from deferred taxes on private pension saving, demographic change will strain Canada's current pattern of public programs.

Mitigating this strain requires action on several fronts. Improving the balance of benefits and costs in health and education programs is one avenue to address it. Paying down regular debt, and perhaps prefunding foreseeable expenses such as drug programs during the breathing space of the next decade, is another. And bolstering the economic base that supports these programs through growth-friendly policies is yet another: raising growth in output per working-age person to 1.9 percent annually while holding growth in service intensity to 1.5 percent would make the net national implicit liability calculated here vanish. Program reforms, prudent fiscal policy, and rapid economic growth are three promising avenues to help Canadians deal with the demographic pressures on their public programs.

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